

## **REMARKS/ARGUMENTS**

Applicant thanks Examiner for the detailed Office Action dated March 27, 2007. In response to the issues raised, the Applicant offers the following submissions and amendments.

### **Amendments**

The specification has been amended at page 1 to include the 'CROSS REFERENCE TO RELATED APPLICATIONS' section.

Independent claims 1, 18 and 36 have been amended to clearly distinguish their scopes from the scopes of any claims of US 6,736,489.

The claims have been amended to address the typographical errors identified by the Examiner.

Accordingly, the amendments do not add any new matter.

### **35 U.S.C. §102**

Claims 1, 2, 9, 18-20, 26, 27-37 and 43 stand rejected for lack of novelty in light of US 6,293,654 to Pidwerbecki. The Applicant respectfully disagrees.

It is well established that a citation must teach all the elements of a claim in order to support a §102 rejection. Claims 1, 18 and 36 all require the heater element of the printhead to have less than 10 nanograms of solid material. Restricting the mass of the heater element is crucial to reducing the energy required for droplet ejection. This aspect of printhead design significantly contributes to the Applicant self-cooling pagewidth printhead designs.

Pidwerbecki does not teach a heater element with a mass less than the claimed 10 nanograms. Column 3, lines 54-65 specifies a drop mass but not a resistive material (heater) mass.

Accordingly, claims 1, 18 and 36 are novel in light of the Pidwerbecki disclosure. It follows that dependent claims 2, 9, 19, 20, 26, 27-35, 37 and 43 are likewise novel.

### **35 U.S.C. §103**

Claims 3, 8, 12-14, 21, 26, 30-32, 42 and 46-48 stand rejected as obvious in light of Pidwerbecki in view of US 6,019,457 to Silverbrook.

Amended independent claims 1, 18 and 36 all require the heater element of the printhead to have less than 10 nanograms of solid material. As discussed above, Pidwerbecki does not provide a disclosure of this feature. Likewise, '457 to Silverbrook is also silent as to this claim limitation. As the above claims all depend from independent claims 1, 18 or 36 it follows that Pidwerbecki and '457 to Silverbrook fails to teach all the claimed elements. Therefore the cited references do not support a §103 rejection of these claims.

Claims 4-6, 22-24 and 38-40 stand rejected as obvious in light of Pidwerbecki in view of US 5,969,005 to Yamashita.

Amended independent claims 1, 18 and 36 are all require the heater element of the printhead to have less than 10 nanograms of solid material. As discussed above, Pidwerbecki does not provide a disclosure of this feature. Likewise, Yamashita is also silent as to this claim limitation. As the above claims all depend from independent claims 1, 18 or 36 it follows that Pidwerbecki and Yamashita fails to teach all the claimed elements. Therefore the cited references do not support a §103 rejection of these claims.

Claims 7, 11, 17, 25, 29, 35, 41, 45 and 51 stand rejected as obvious in light of Pidwerbecki in view of US 5,607,041 to Kubby.

Amended independent claims 1, 18 and 36 are all require the heater element of the printhead to have less than 10 nanograms of solid material. As discussed above, Pidwerbecki does not provide a disclosure of this feature. Likewise, Kubby is also silent as to this claim limitation. As the above claims all depend from independent claims 1, 18 or 36 it follows that Pidwerbecki and Kubby fails to teach all the claimed elements. Therefore the cited references do not support a §103 rejection of these claims.

Claims 15, 33 and 49 stand rejected as obvious in light of Pidwerbecki in view of US 4,965,594 to Komuro.

Amended independent claims 1, 18 and 36 are all require the heater element of the printhead to have less than 10 nanograms of solid material. As discussed above, Pidwerbecki does not provide a disclosure of this feature. Likewise, Komuro is also silent as to this claim limitation. As the above claims all depend from independent claims 1, 18 or 36 it follows that Pidwerbecki and Komuro fails to teach all the claimed elements. Therefore the cited references do not support a §103 rejection of these claims.

Claims 16, 34 and 50 stand rejected as obvious in light of Pidwerbecki in view of The Fabrication and Reliability Testing of Ti/TiN Heaters by DeMoor et al..

Amended independent claims 1, 18 and 36 are all require the heater element of the printhead to have less than 10 nanograms of solid material. As discussed above, Pidwerbecki does not provide a disclosure of this feature. Likewise, DeMoor is also silent as to this claim limitation. As the above claims all depend from independent claims 1, 18 or 36 it follows that Pidwerbecki and DeMoor fails to teach all the claimed elements. Therefore the cited references do not support a §103 rejection of these claims.

### **Double Patenting**

Claims 1-19 and 21-51 stand rejected for statutory double patenting in light of US 6,736,489. In dependent claims 1, 18 and 36 have been amended such that their respective scopes are no longer co-extensive with any of the '489 claims. The dependent claims also have scopes of different extent to any of the '489 claims.

### **Conclusion**

It is respectfully submitted that the Examiner's objections and rejections have been successfully traversed and the application is now in condition for allowance. Accordingly, favorable reconsideration is courteously solicited.

Very respectfully,

Applicant/s:



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